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	Mata Kuliah	Algoritma Pemrograman Praktik VII
	Projek	Projek Pertemuan 12

Copy Paste Codingan:

1. Pembuatan database

```
import sqlite3

koneksi = sqlite3.connect("database_hewan.db")
kursor = koneksi.cursor()

koneksi.execute('''
                CREATE TABLE HEWAN(
                 id_hewan INTEGER PRIMARY KEY AUTOINCREMENT,
                 nama_hewan VARCHAR(50),
                 jenis VARCHAR(50),
                 asal VARCHAR(50),
                 jml_sekarang INTEGER(10),
                 thn_ditemukan INTEGER(10)
                )
                ''')
koneksi.close()
```

2. Insert data

```
import sqlite3
koneksi = sqlite3.connect('database_hewan.db')

koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Orangutan', 'Mamalia', 'Sumatera', 14000, 2021)")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Harimau Sumatera', 'Mamalia', 'Sumatera', 400, 2020)")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Komodo', 'Reptil', 'Nusa Tenggara', 3000, 2019)")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Anoa', 'Mamalia', 'Sulawesi', 5000, 2022)")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Badak Jawa', 'Mamalia', 'Jawa', 72, 2021)")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Kuskus', 'Mamalia', 'Papua', 50, 2020) ")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Trenggiling', 'Mamalia', 'Sumatera', 90, 2022)")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Cendrawasih', 'Burung', 'Papua', 45, 2021)")
```

```
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Penyu Hijau', 'Reptil', 'Nusa Tenggara Timur', 20,
2022)")
koneksi.execute("INSERT INTO HEWAN (nama_hewan, jenis, asal, jml_sekarang,
thn_ditemukan) VALUES ('Gajah Sumatera', 'Mamalia', 'Sumatera', 2500, 2023)")

koneksi.commit()
koneksi.close()
```

3. Select All

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN")
#menampilan semua data dalam database
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

4. Select Where
    a. Jenis = mamalia

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN WHERE jenis = 'Mamalia'")
#menampilan semua data dalam database
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
```

```
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

b. Jumlah <= 1000

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN WHERE jml_sekarang <= 1000")
#menampilan semua data dalam database
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

5. Select where and

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN WHERE jenis = 'Mamalia' AND asal =
'Sumatera'")
#menampilan semua data dalam database
```

```
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

6. Select where or

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN WHERE asal = 'Sumatera' OR jml_sekarang >=
500")
#menampilan semua data dalam database
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

7. Select sum

```
import sqlite3

# Membuat koneksi ke database atau membuat database baru jika belum ada
```

```
koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

# Menjalankan query SUM
kursor.execute("SELECT SUM(jml_sekarang) FROM HEWAN")
total_jumlah = kursor.fetchone()[0]

print(f"Total populasi hewan langka = {total_jumlah}")

# Menutup koneksi
koneksi.close()
```

8. Select Order By
    a. Alphabet

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN ORDER BY nama_hewan ASC")
#menampilan semua data dalam database
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

    b. Jumlah Hewan DESC

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN ORDER BY jml_sekarang DESC")
#menampilan semua data dalam database
```

```
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

c. Tahun DESC

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

kursor.execute("SELECT * FROM HEWAN ORDER BY thn_ditemukan DESC")
#menampilan semua data dalam database
baris_tabel = kursor.fetchall()

#buat tabel HEWAN
print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

9. Select Like

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()
```

```
nama_hewan = 'B%'
kursor.execute(f"SELECT * FROM HEWAN WHERE nama_hewan LIKE ?", (nama_hewan,))
baris_tabel = kursor.fetchall()

print('data HEWAN 2023')
print("||","="*111,"||", sep = '')
print("{:<7} {:<20} {:<15} {:<20} {:<20} {:<2}".format("||ID", "Nama Hewan",
"Jenis", "Asal", "Jumlah Sekarang", "Tahun Terakhir Ditemukan  ||"))
print("||","="*111,"||", sep = '')

for baris in baris_tabel:
    print("||{:<5} {:<20} {:<15} {:<20} {:<20} {:<26}||".format(baris[0],
baris[1], baris[2], baris[3], baris[4], baris[5]))

print("||","="*111,"||", sep = '')

koneksi.close()
```

10. Update
    a. Jumlah Orangutan

```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

id_hewan = 1
jml_baru = 900

kursor.execute(f"UPDATE HEWAN SET jml_sekarang = {jml_baru} WHERE id_hewan =
{id_hewan}")
koneksi.commit()

# Menampilkan pesan setelah update berhasil
if kursor.rowcount > 0:
    print(f"Data hewan dengan ID {id_hewan} berhasil diupdate.")
else:
    print(f"Tidak ada data hewan dengan ID {id_hewan}.")
koneksi.close()
```

    b. Asal Komodo

```
import sqlite3

# Membuat koneksi ke database atau membuat database baru jika belum ada
koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()
```

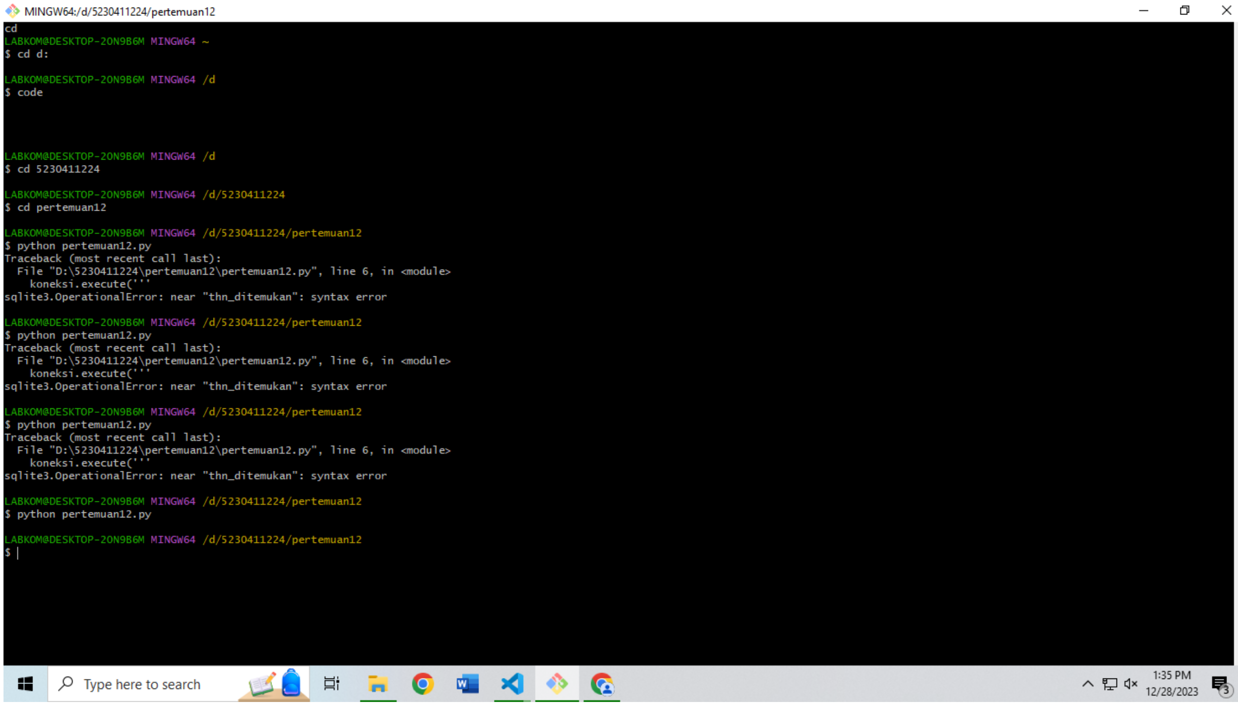
```
# Data yang ingin diubah
id_hewan = 3
asal_baru = "Nusa Tenggara Timur"

# Menjalankan query UPDATE
kursor.execute(f"UPDATE HEWAN SET asal = '{asal_baru}' WHERE id_hewan =
{id_hewan}")
koneksi.commit()

# Menampilkan pesan setelah update berhasil
if kursor.rowcount > 0:
    print(f"Data hewan dengan ID {id_hewan} berhasil diupdate.")
else:
    print(f"Tidak ada data hewan dengan ID {id_hewan}.")

# Menutup koneksi
koneksi.close()
```

11. Delete

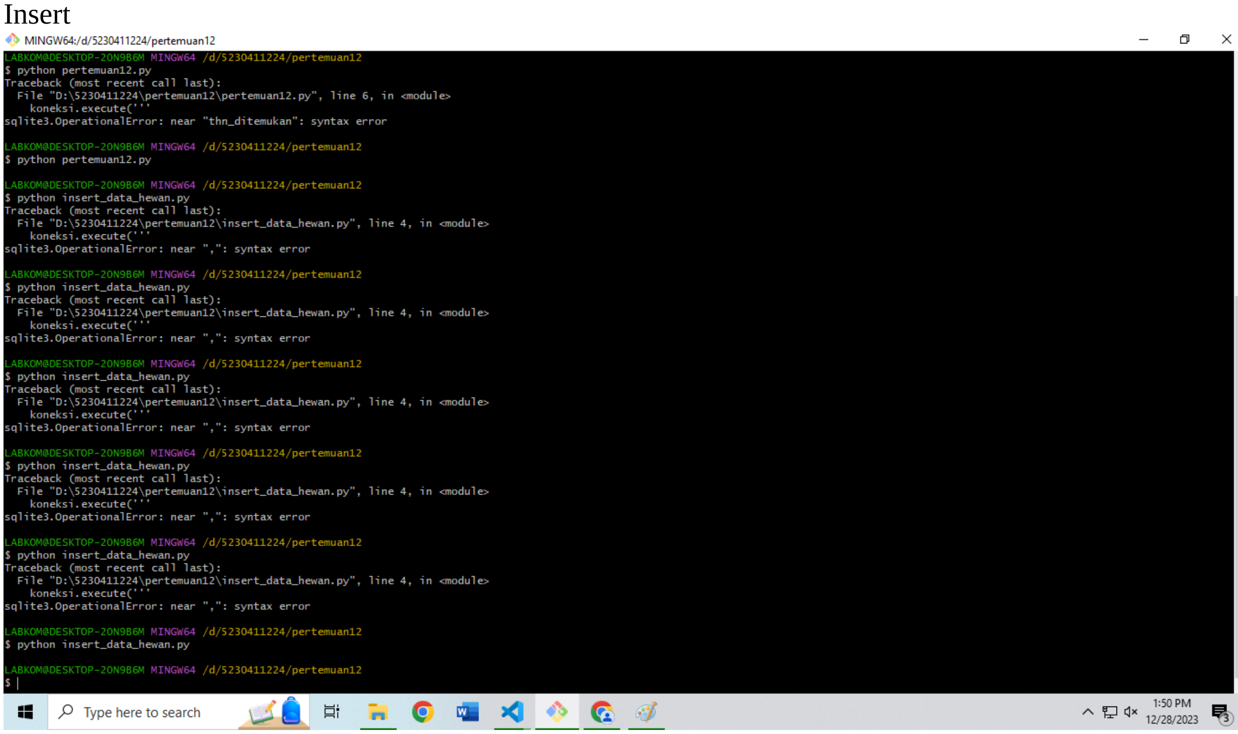
```
import sqlite3

koneksi = sqlite3.connect('database_hewan.db')
kursor = koneksi.cursor()

jenis = 'Mamalia'

kursor.execute(f"DELETE FROM HEWAN WHERE jenis = '{jenis}'")
koneksi.commit()

if kursor.rowcount > 0:
    print(f"Data hewan dengan jenis = {jenis} berhasil dihapus.")
else:
    print(f"Tidak ada data hewan dengan jenis = {jenis}.")

koneksi.close()
```

Screenshoot hasil codingan:

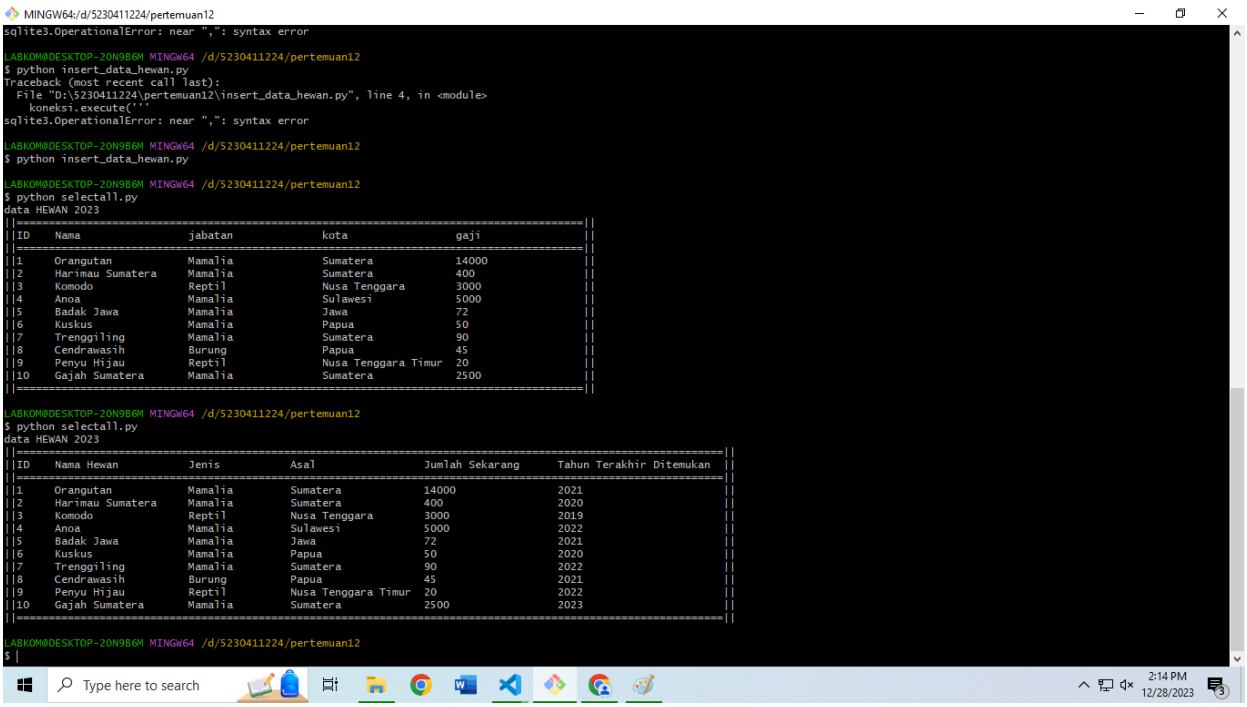
1. Pembuatan database



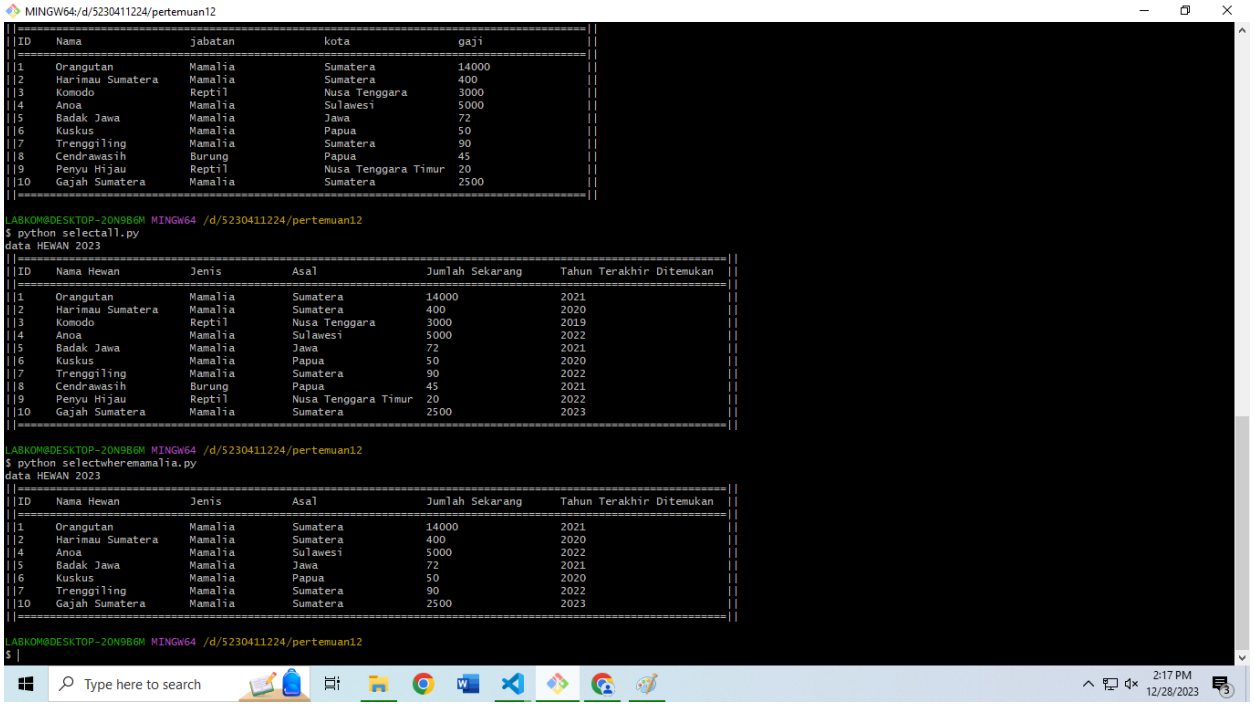
2. Insert



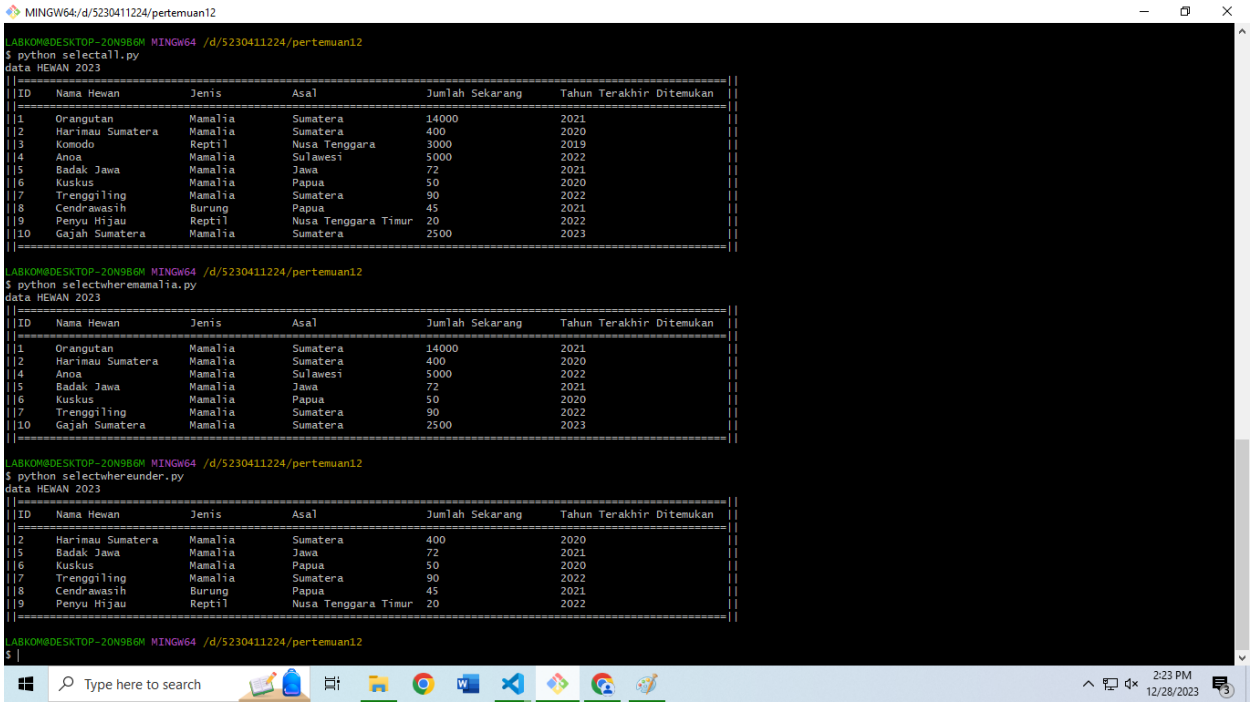
3. Select all



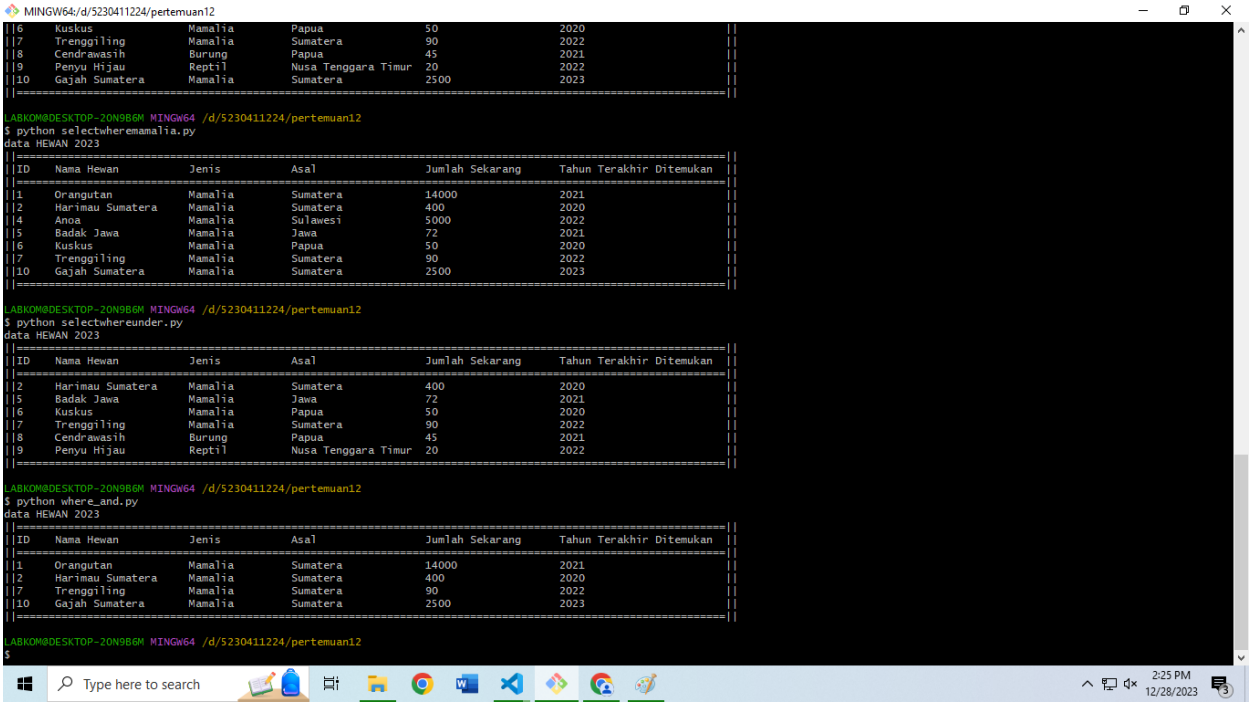
4. Select where
   a. Jenis = Mamalia



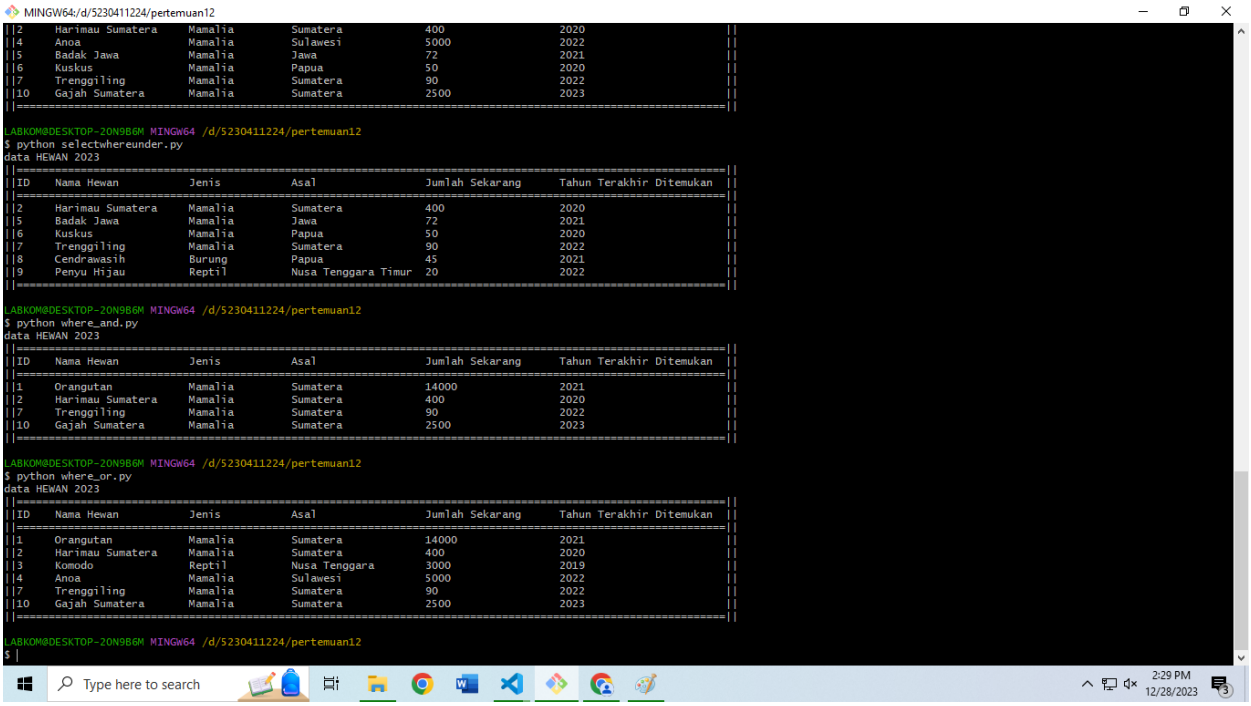
   b. Jumlah <=1000



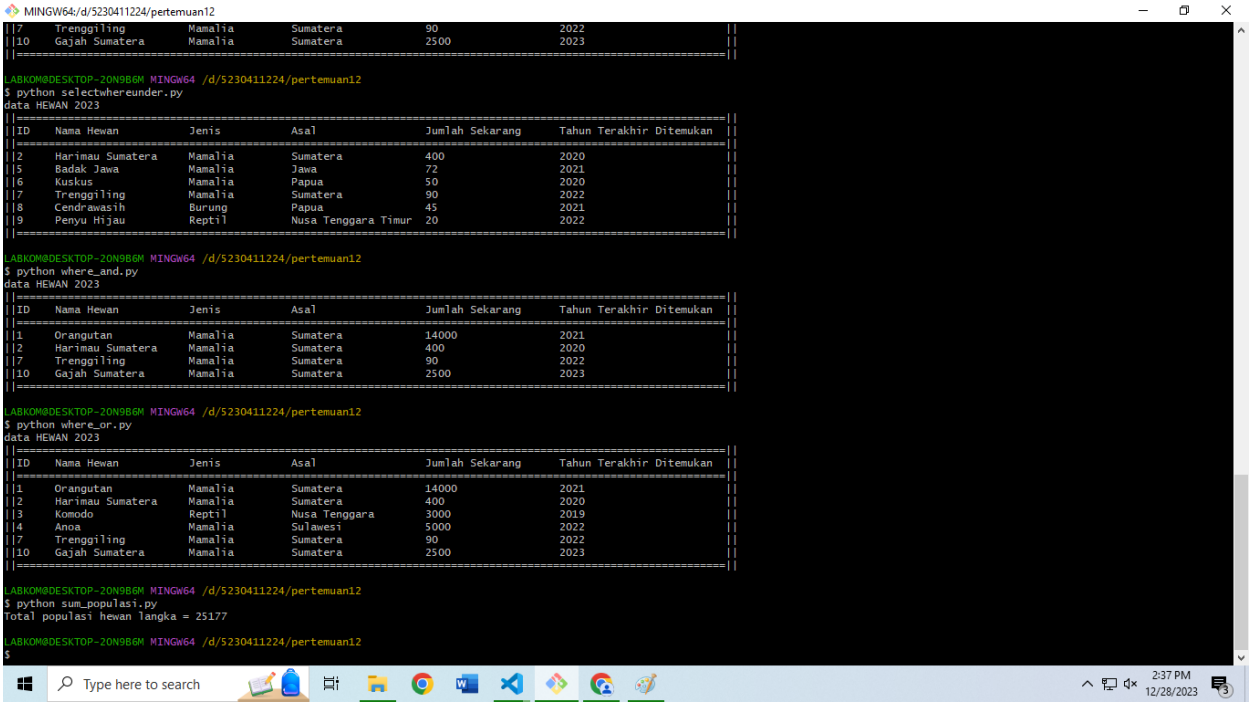
5. Select where and



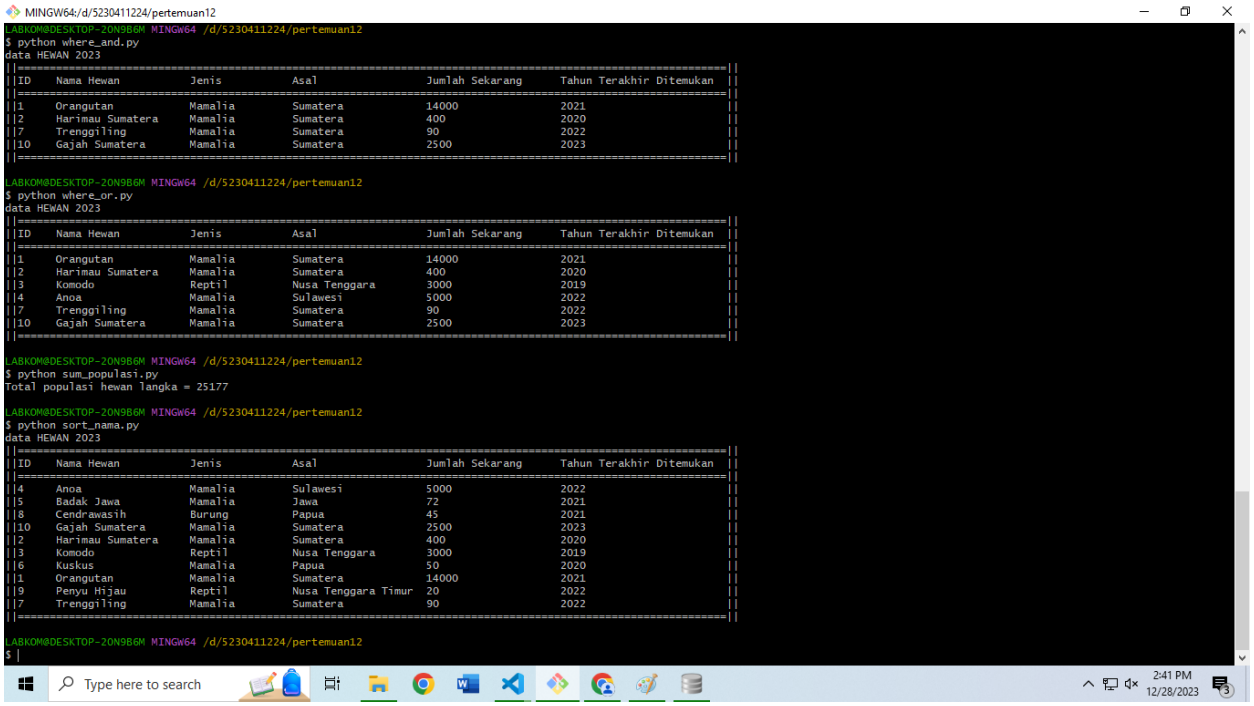
6. Where Or



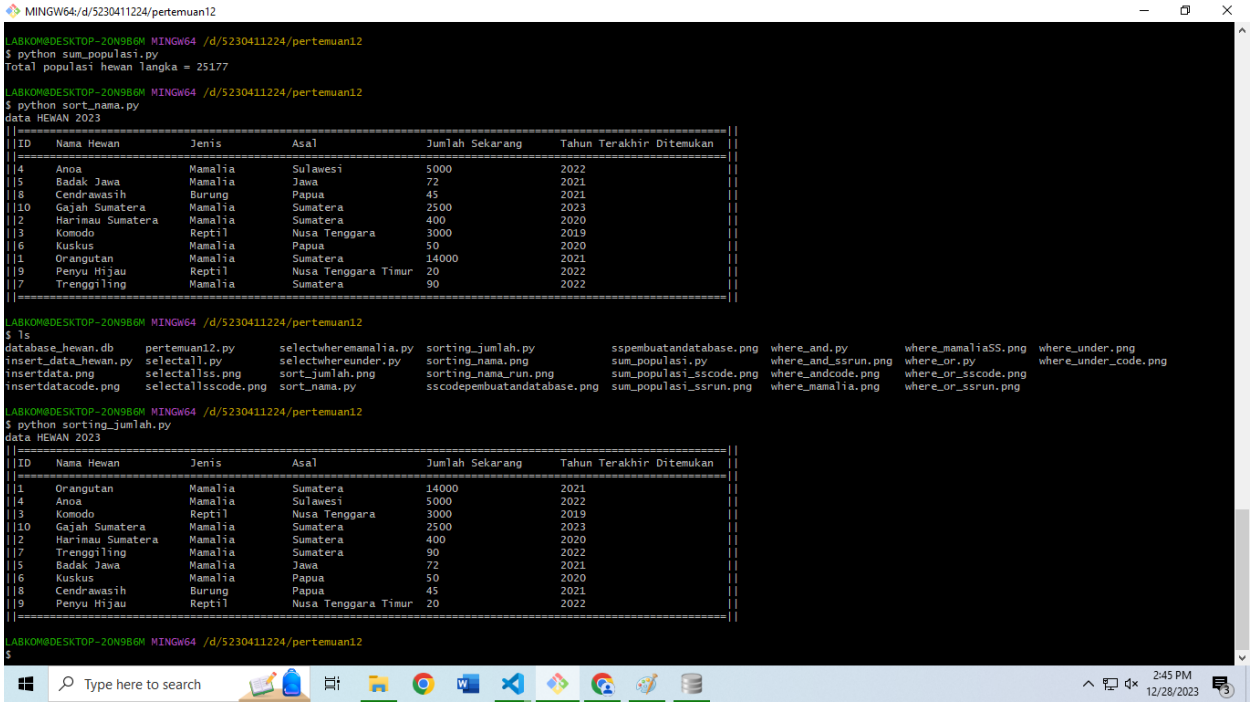
7. Select Sum



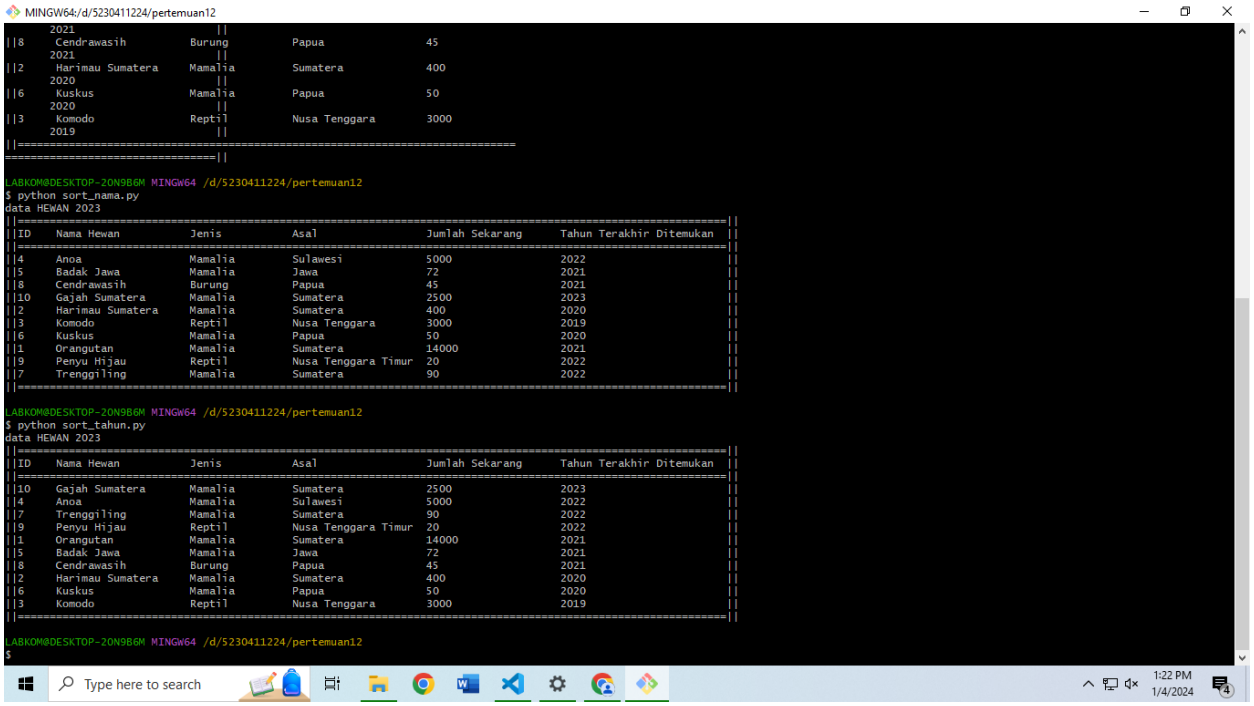
8. Select Order By
   a. Alphabet



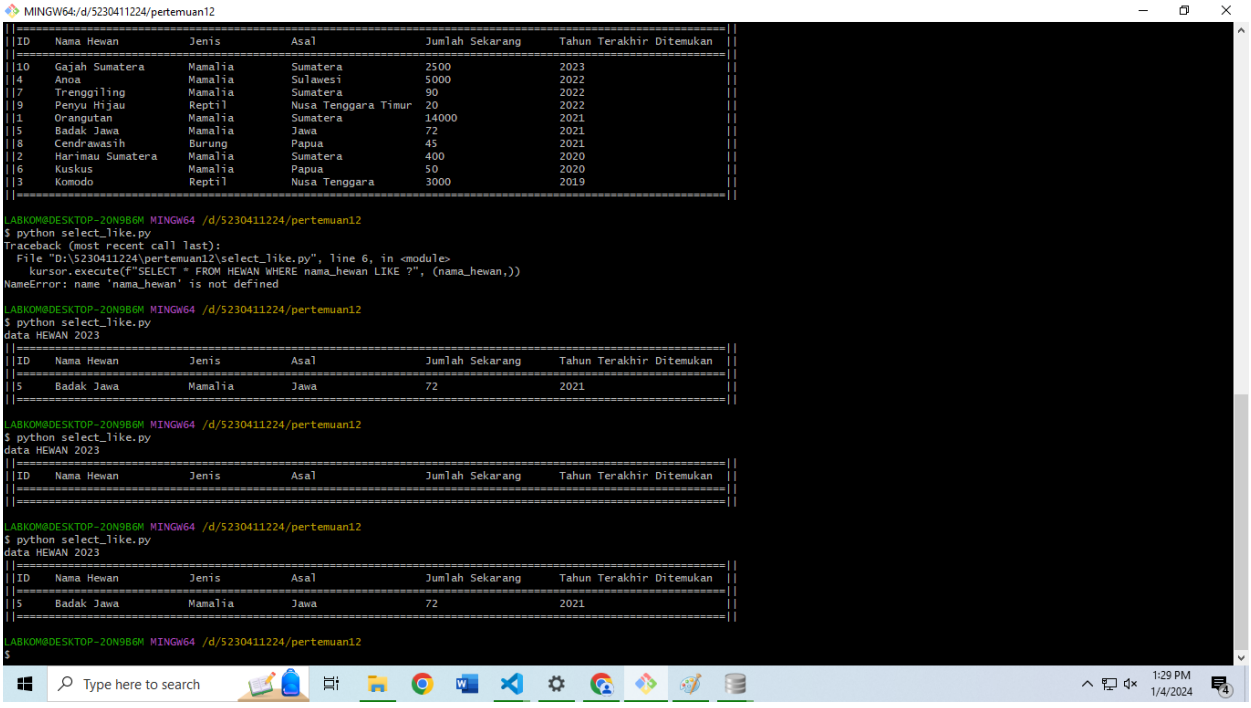
b. Jumlah



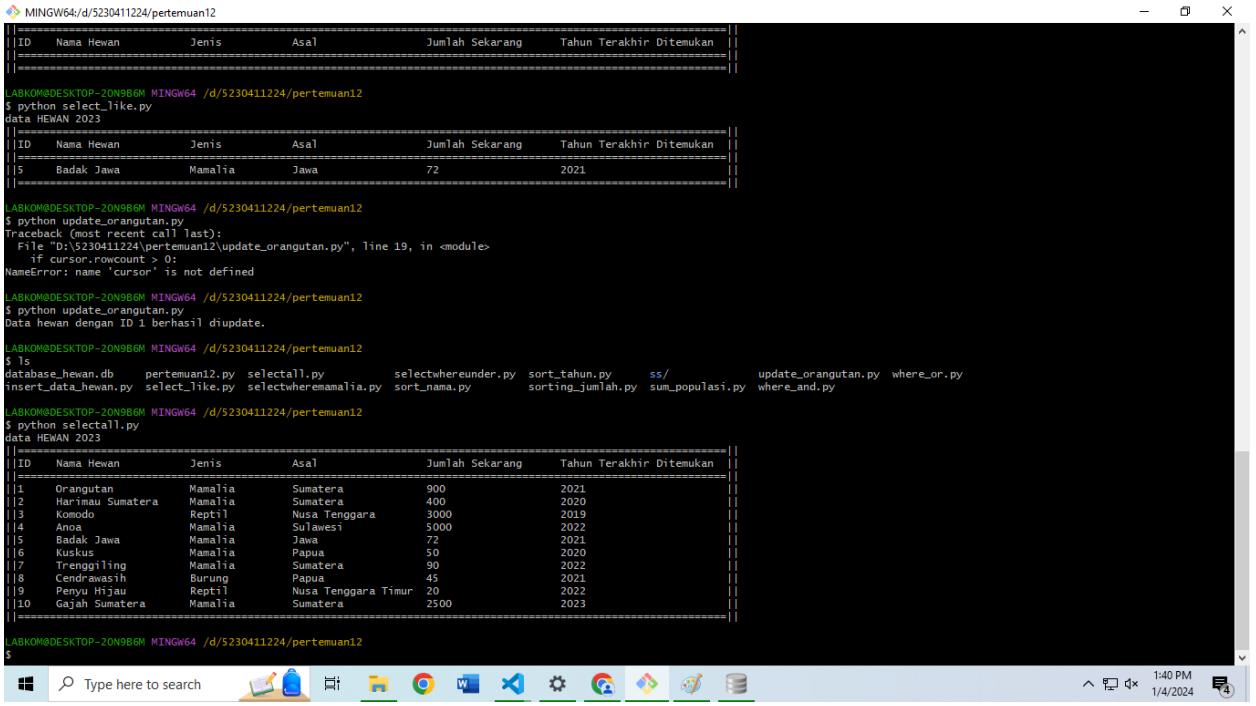
c. Tahun



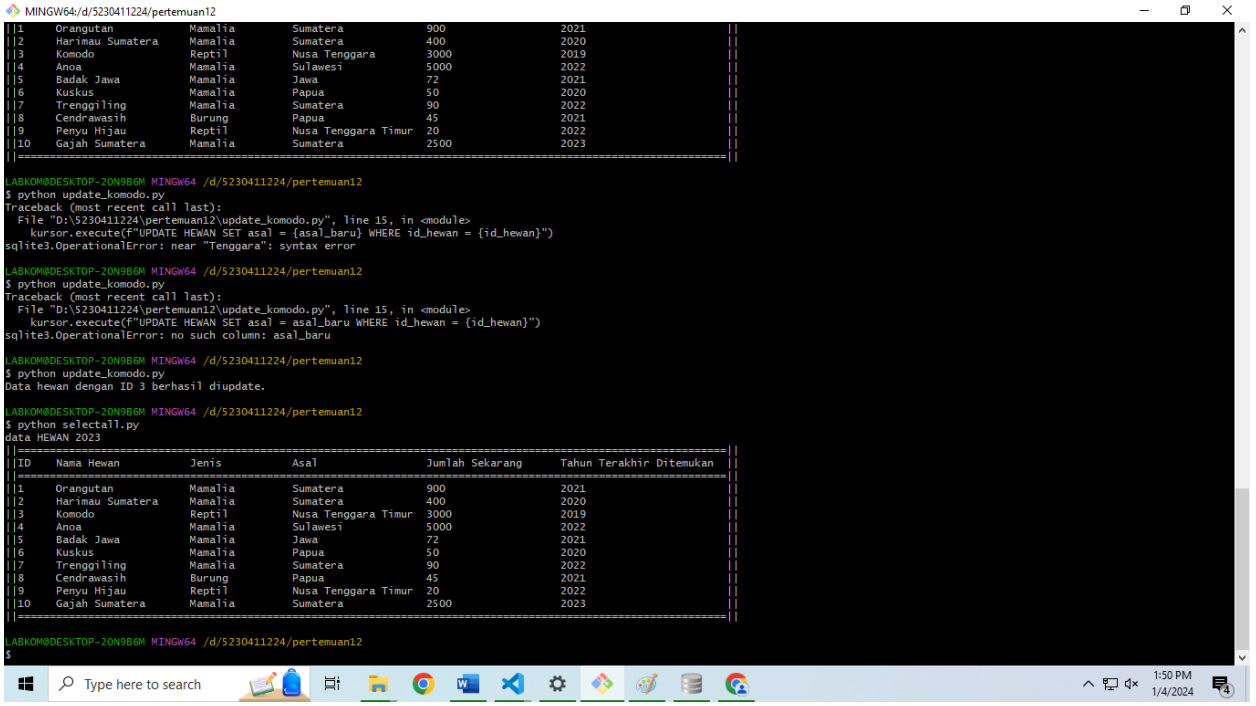
9. Select Like



10. Update Set
    a. Orangutan

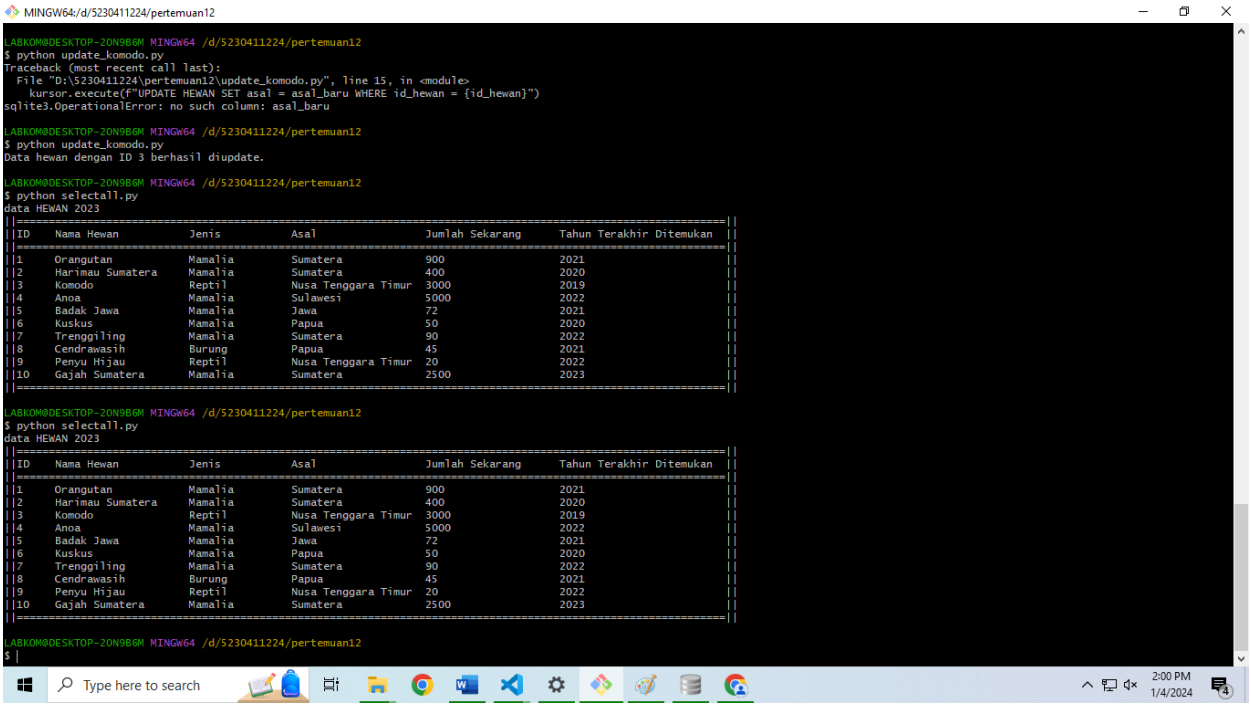


b. Komodo



11. Delete From

before



After